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HISTORIC NATCHITOCHES, LOUISIANA, ITS TWO-CENTURY RAISON D'ETRE

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Some cities are born and grow apace in response to a single but highly pronounced and sustained environmental advantage. Others come into being in response to advantages that prove but temporary and soon die out, leaving deserted homes, streets, and business houses as specters of what once was. Still others have the versatility that enables them to ride the waves of adversity and to adjust to a rapidly changing environment—maintaining their existence and even a steady growth, tho never becoming great cities.

Natchitoches,[1] Louisiana, the oldest settlement in the Louisiana Purchase—older even than New Orleans—is of the last named type, for in 1930 the two-and-a-quarter-century old community could muster a population of only 4,547, and yet is by no means a specter town.

Natchitoches has had a long and colorful career, and the appearance of the town gives striking evidence of the fact. Streets, tho smoothly paved, are crooked, even winding, and bear such suggestive names as St. Denis, Touline, de Meziere, etc.—all redolent with history. French-speaking mulattoes and swarthy Mexicans, as well as landed aristocrats and cultured students from the state normal college, located there, throng the streets on "Saddy evenin'." The dignified old Catholic cathedral, with its three domes and distinctly Spanish appearance, stands almost opposite the ultra-modern Baptist church and the imposing federal building. The low-roofed stuccoed Spanish cottage, with creaking board shutters that open directly onto the sidewalk, crumbles as it stands

[1] Pronounced Năk'ĕ-tŏsh. The name has been variously translated "chinquapin eaters," "chestnut eaters," and "pawpaw eaters." The Indian tribe of that name was a member of the Caddo confederacy.

alongside the white-columned residence of the twentieth century. In Natchitoches the old and the new dovetail; there are really two towns in one.

PHYSIOGRAPHIC LOCATION

The Washita Mountains of southern Arkansas dwindle away southward in Louisiana into a V-shaped mass of hills, with the point of the "V" approximately at Alexandria. From eastern Texas another ridge of hills, narrow but high, enters Louisiana and decreases southward from Shreveport. Between the two highlands, the erratic Red River, in its southeastward rush to join the Mississippi, swings first against one bank and then against the other, causing on either side a succession of potentially strategic bluffs alternating with productive floodplains. The width of the valley varies abruptly between six and thirty or more miles because of transverse ridges that extend partly across the valley like broken rungs in a ladder. It was inevitable that trading posts should be succeeded by forts, and later by shipping centers, on some of these bluffs. Just which sites should be so chosen was determined ultimately by local conditions.

But this attractive valley had one great disadvantage that for nearly two centuries practically nullified the combined advantages. This obstacle was the series of great log jams in the river, known collectively as The Great Raft.[2] The barrier was at times more than a hundred miles long, and the downstream end formed a more or less permanent head of navigation. Floods caused by the impounded freshets spread destruction, and in the wider parts of the valley the escaped floodwaters frequently carved out a new course, with terrifying rapidity. Thus, with the exception of a few key situations, few localities in the valley offered the possibility of permanent adjustments to so capricious an environment.

RIVAL CLAIMS OF FRANCE AND SPAIN

For more than a century France claimed that its Province of Louisiana extended westward as far as the Sabine River, while Spain claimed that its Mexican possession extended as far east as the Red River. This overlapping claim Spain had partly made good, at the end of the seventeenth century, by establishing the Presidio de los Adaes, well over in the disputed territory—in fact within fifteen miles of the Red River.

[2] J. E. Guardia, The Rôle of Red River's Log Jams in the Development of the Shreveport Area, in the *Bulletin of the Philadelphia Geographical Society*, July, 1933.

It was at this juncture that Louis XIV of France deemed it wise to lease the entire Province of Louisiana (extending from Canada to the Gulf of Mexico, and from the Mississippi River to the Rockies) to the daring commercial genius, Anthony Crozat. A part of the ambitious Crozat's plan was to establish a post on the Red River for the paradoxical purposes of opening up trade with the Spaniards of Mexico and (at France's request) of checking the presumptuous aggression of these same Spaniards at Los Adaes.

FOUNDING OF NATCHITOCHES IN 1714

Of this combination of circumstances, Natchitoches was born. The site of the present town offered four distinct advantages. (1)

FIG. 1. Board shutters, stuccoed walls, a patio with mulberry trees at the back door, and the type of architecture combine to give an atmosphere of eighteenth century Spain.

It was at one of the valley constrictions where a projecting "broken ladder rung" offered a commanding site for a fort, well above overflow. (2) At this point the two parts of the braided stream united into a single, easily-fortified channel. (3) The distance between the Red River and Los Adaes was shorter here than at any other equally accessible point. (4) It was at the head of navigation, for from this point The Great Raft choked the channel for more than a hundred miles upstream.

Crozat entrusted his project to Louis Juchereau de St. Denis. Having ascended the Mississippi and the Red rivers, St. Denis

renewed trade relations with the Natchitoches Tribe of Indians, with whom the French had been trading irregularly since about 1700. He left ten picked men in charge of his merchandise at the Natchitoches site and journeyed overland into Texas and on to the City of Mexico. Having married the granddaughter of a Spanish commandant, whose aggressions he had been ordered to check, he

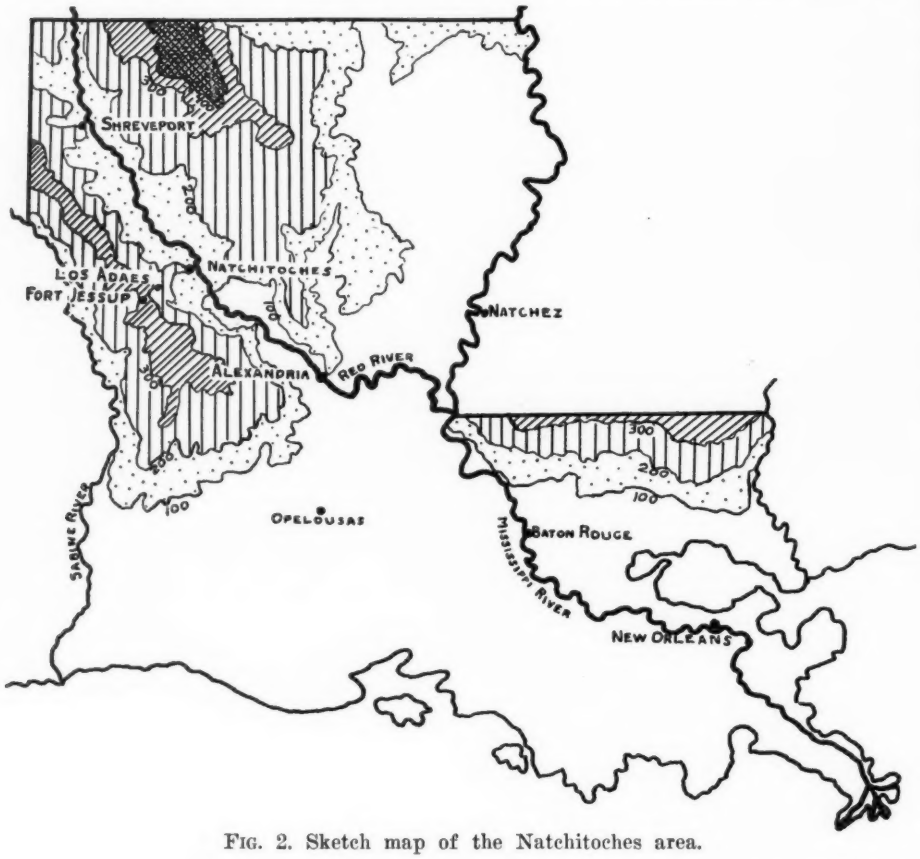

FIG. 2. Sketch map of the Natchitoches area.

returned to the selected site, established the post, and built Fort St. Jean Baptiste, around which the town of Natchitoches developed. As commandant of the fort, both friend and terror to the Indians, ruling genius, colorful dictator of fashion, and daring adventurer, Louis Juchereau de St. Denis occupies a place in Louisiana history that rivals that of Captain John Smith in Virginia.

NATCHITOCHES AS A MILITARY POST

From a military standpoint the post had a career of a century and a half that would have surprised even St. Denis himself. Fort

St. Jean Baptiste served to hold the Spaniards west of a narrow zone near the crest of the Sabine-Red divide, tacitly accepted by both sides as neutral, and called by them "No Man's Land." Fort Natchitoches succeeded Fort St. Jean Baptiste and was itself suc-

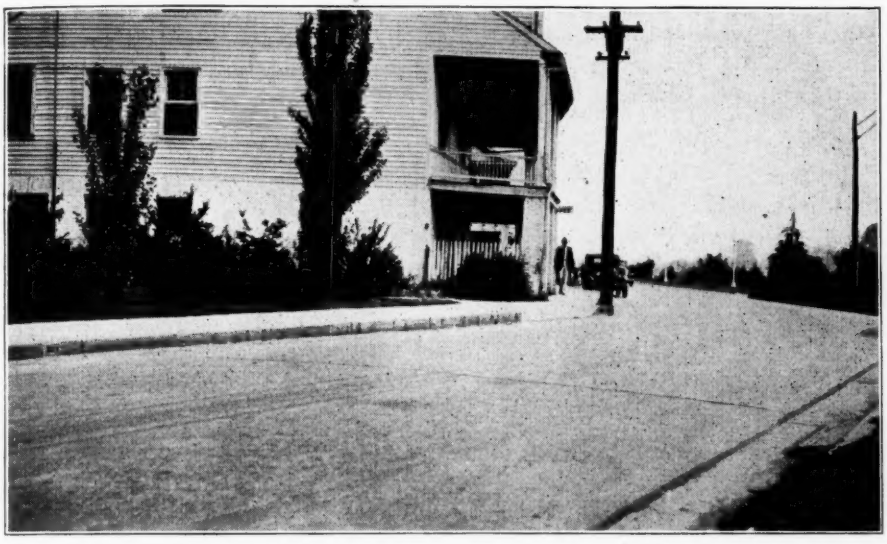

FIG. 3. Striking contrasts! An old inn with lower story of brick and upper of wood, stands beside a crooked but well paved street, and looks out across the "white way" and neutral ground where steamboats formerly landed, to the abandoned river bed beyond.

ceeded by the federal Fort Claiborne soon after the purchase of Louisiana, when Natchitoches was about ninety years old. All these forts were erected against the Spaniards of Mexico. Even as late as 1811, eight years after Louisiana had become a part of the United States, they seriously threatened to attack Fort Claiborne.

But with the establishment of the federal Fort Jessup in 1823, some twenty-five miles southwest of Natchitoches, nearer the Mexican border, the importance of Natchitoches as a military outpost began to wane. However, with the outbreak of the Mexican War, it took on new activity as a concentrating base.

Again, during the Civil War, Natchitoches figured prominently. It, together with the Grand Ecore bluff overhanging the Red River four miles north, became an objective in the Federal General Banks's unsuccessful Red River campaign against Shreveport.

NATCHITOCHES AS A TRADING POST

Far more colorful than the town's military rôle has been its history as an *entrepôt* between the Mississippi Valley and Mexico.

Located in the interior some five hundred miles up from the mouth of the Mississippi River, with no break in the water route, the post had direct communication with New Orleans. Westward the old Spanish Trail led to Nacogdoches and San Antonio, to the Rio Grande and even to the City of Mexico. The junction of these land and water routes was commanded by the guns of Fort St. Jean Baptiste. Up the Mississippi and the Red came pirogue, keel boat, and bateau; some were paddled, some poled or towed, and others moved by means of sails. Groceries, tobacco, spirits, drygoods and other manufactured goods came to Natchitoches from the Atlantic seaboard and Europe. From as far west as the Rio Grande came pack trains, sometimes numbering as many as four hundred horses and mules, laden with peltries, dried buffalo tongue, and bars of silver from the Mexican mines. The horses and mules themselves were often sold and taken to New Orleans, and sometimes to Cuba.

In addition to this exchange of products from other districts, the Natchitoches country shipped its own produce—cotton, corn, rice, tobacco (for which the region was famous), meat, and skins. In fact, when supplies from France failed, and New Orleans faced hunger, Natchitoches several times came to the rescue.

Steamboat Trade

When the first steamboat to reach Natchitoches arrived in 1824 it found awaiting it a river trade already a century old. Trade needed no "working up." It merely shifted from dugout and flatboat to steamboat. Timothy Flint, the pioneer geographer of the Mississippi Valley, writing of Natchitoches in 1826, said:

> From its position, this must be a great inland town. At the head of steamboat navigation, the last town westward toward the Spanish frontier, and on the great road to that country and to Mexico, it has already a profitable trade with that country. . . . The relations of this place with the interior of the state, and of New Spain, must necessarily be extended, and this must ultimately become a place of great trade. Being, as they phrase it, the "jumping off place," it is necessarily the resort of desperate, wicked, and strange creatures, who wish to fly away from poverty, infamy, and the law, and those who have one, from conscience.

Flint was correct. Natchitoches, being a frontier "city of refuge" for those who found it advisable to "go west" and were "making for the Mexican border," long had an exceedingly unenviable reputation. To this fugitive population was added a "roustabout" element, of which Natchitoches, by virtue of its position at the head of navigation, had an unusually large proportion. During the regime of keel and flat boat trade, sheer brute strength

was the one great requirement for men following the boatman's life. Boat hands were of a low mental type, and from thirty to forty of them were required to handle a loaded keel boat. As river craft often had to await the arrival of pack trains, and boats never navigated during the night, the roustabouts spent their nights ashore. Thus the waterfront at Natchitoches was often the scene of free-for-all brawls.

With the advent of the steamboat, this condition of affairs rapidly improved. The water front—"Front Street"—for several blocks became almost a continuous wharf, inasmuch as the Red River was deep up to the very foot of the steep bank. On the landward side of the street, and looking out across the river, there developed a row of substantial warehouses, general merchandise stores, and a hotel or two. Natchitoches's future seemed secure. Again Timothy Flint wrote: "It is at present a growing place and will one day become the largest town in this (southwestern) country except New Orleans."

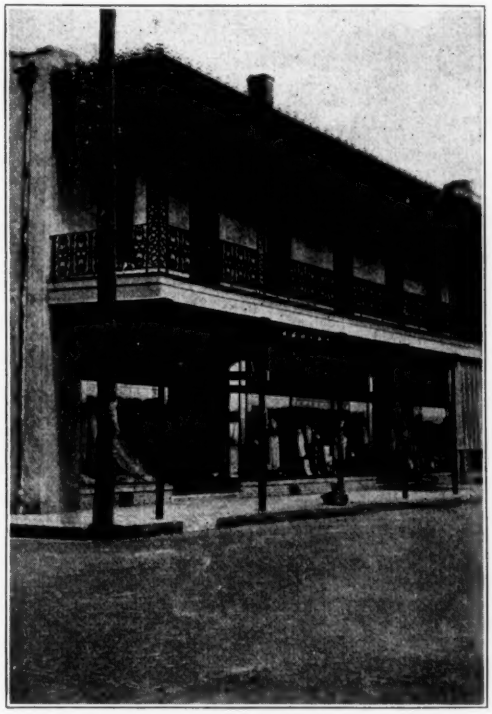

FIG. 4. Stuccoed wall and iron lacework, paved street, and an up-to-date department store.

ROADS AND TRAILS

All roads led to Natchitoches. The previously mentioned Spanish Trail to San Antonio was easily the most important. Another trail led northward into the Arkansas country, and a third southwestward into the Opelousas district. A fourth followed the Red and the Mississippi rivers to New Orleans, and tho it was called a stage coach road it was seldom passable. The two rivers offered a far more satisfactory highway. Still another—the important Natchez Trail—led eastward to Natchez, Mississippi, where it con-

nected with the better known Natchez Trace, leading southward from Nashville, Tennessee. Compared with our modern highways, however, even the best of these roads were but miserable makeshifts.

A Focal Point for Emigrants

Its frontier position, its water route, and its system of roads made Natchitoches an outfitting station for emigrants to the Arkansas territory, Texas, and the West. During the 1830's, migrants from the north and east drifted in flatboats down the Mississippi to Natchez, where they sold their boats as lumber and set out for Natchitoches, either by steamboat up the Red River, or by the Natchez Trail. The latter lay largely thru a swampy district and was a hazardous undertaking. Plundering of slaves, horses, and other property was common; gamblers and cut-throats abounded. Many a home-seeker who hopefully turned westward at Natchez never arrived at Natchitoches.

Reverses

There were, however, several reverses in store for Natchitoches which neither its own citizens nor the enthusiastic Timothy Flint could possibly foresee.

(1) The federal government had The Great Raft removed from the river (1833-1838), and the head of navigation shifted more than 150 miles upstream. In response to this shift, the usurping city of Shreveport developed rapidly.

(2) The capricious Red River, beginning at a point several miles above Natchitoches, gradually carved a new route for itself (approximately 1825 to 1850), and left the old town five miles in the interior, on the abandoned channel.

(3) Railroads were not attracted to the valley because of the menace of floods, and because the river itself served as a very excellent highway. When finally in 1881 the Texas and Pacific Railroad was built from New Orleans to Shreveport, the line kept well up on the Sabine-Red divide, to the west, and left Natchitoches fourteen miles off the route. To carry out a former comparison, it might be said that the railroad ascended the western upright of the ladder, and Natchitoches was at the isolated eastern end of one of its broken rungs—forsaken by the river and ignored by the railroad. Tho a generous citizen built and operated a branch road along the "rung," connecting with the trunk line, the town's contested commercial leadership could not survive the double blow.

When, forty years later, the town secured more advantageous railroad connections, it profited little—Shreveport had irretrievably outdistanced Natchitoches.

NATCHITOCHES TODAY

What has kept the town going—even growing in population, wealth, and general appearance?

(1) Being the center of an exceedingly productive farm area and surrounded by cotton-growing counties, it is typically a good "cotton town."

(2) Louisiana's sole normal college—one of the largest in the South—is located here. Its twelve to fifteen hundred students and the town's 4,500 residents make it an almost ideal college community.

(3) Because of a variety of attractions, people of diverse tastes and pursuits are attracted to Natchitoches. The town's checkered history, the interesting landmarks, the general culture and quaint atmosphere of the place appeal to many. At no other place in the South is there such a unique art colony. There is extraordinary fishing afforded by the artificially dammed and improved abandoned river bed. And converging interstate highways make Natchitoches easily accessible. All these features combine to attract the tourist, the artist, the writer, and the sportsman.

In Natchitoches the old and the new stand side by side; the cultural and the commercial supplement each other; the romantic and the practical meet, commingle, and perhaps entwine, but never lose their individuality.

TECHNIQUES IN THE USE OF THE READING TOOL IN REACHING WORTHWHILE GEOGRAPHIC UNDERSTANDINGS

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Reading is probably the most used and certainly one of the most effective tools to use as an aid to attainment of the major understandings in any field. This aspect of the use of the reading tool is important to a marked degree in the field of geography where, because of the very nature of the subject matter being dealt with, the student's experience must, to so large a degree, be vicarious. It would be ideal if we could take each student on a personally conducted tour to all of the major regions of the world and allow him to discover for himself the identifying elements of the geographic personality of each area. Since such first-hand experience is impossible for each individual, well-written accounts of the findings of accurate observers in the field help to make vivid to the learner the significant types of adjustments of human activity to natural environment which help to give identity to each of the major geographic regions, and at the same time help the individual to project himself into these regions *in imagination.*

SPECIFIC READING ABILITIES WHICH WE AS TEACHERS SHOULD HELP STUDENTS TO ATTAIN

1. Ability to recognize in reading material *human items* and *conditions* and *natural items* and *conditions* and to recognize *direct and indirect statements of relationships* existing between these human and natural items and conditions (insofar as these contribute to geographic personality understandings) is *the prime requisite of all intelligent geographic reading.* We speak of the relationship that exists between man's activity and the natural environment as a geographic relationship. Geographic relationships are the warp and woof out of which the fabric of geography is made. For this reason it is essential that ability to recognize geographic relationships and to measure their relative importance for a given purpose be developed at the earliest possible stage in the geographic training of the individual.

2. The acquisition of the ability to grasp quickly the main and subordinate ideas in a paragraph, a chapter, a book is highly im-

portant to the individual. Before he is able to master the understandings set forth in reading material the student must be able to see and understand relationships between ideas and must be able to recognize the core thought and the elements of thought that modify and support it. The teacher should begin training the child in this respect with his first lesson in geography. At the earliest levels the child must have much guidance in this respect but he should constantly increase in power to independently so analyze materials for his own use.

3. Ability should be developed at an early stage in the student's training in the use of reading as an aid in securing answers to questions—either those suggested by the study guide supplied by the teacher or text or those which arise in the mind of the student as he reads. This may mean the use of the student's text alone or it may require the careful perusal of many volumes. Very early in his training the student should be taught to use effectively the table of contents and the indices of texts and reference books in order that he may be able quickly to discover what the material before him has to offer as an aid to solving his problem. The student should be taught the specific function of his text, of atlases, encyclopedias, dictionaries, statistical abstracts, Commerce Yearbooks and the like and should be led, *through use,* to appreciate their value to his own training. Careful consideration should be given to helping the student to develop power to scan materials so as to recognize at the outset, with but a few scattered fixations, the relevancy or irrelevancy to the problem at hand of the paragraphs before him. Much time is wasted by students, even at the adult level, either in the reading of irrelevant material or in the reading of citations in several different sources which, though offering material that is pertinent to the problem, repeat over and over the same general type of ideas and therefore contribute little of new understandings to the individual.

4. Ability to gather data from statistical material or from statements in textual materials and to formulate deductions therefrom which will be helpful in building up functioning understandings of the geographic personalities of regions is essential to the most accurate geographic thinking. Skill should be developed in answering such questions as "In the light of your findings, what is the present status of ocean-borne commerce on the Mediterranean Sea as compared with the trade of that area in the decade of 1910-1920?", or, "According to the statistics which this article presents

on the cotton manufacturing industry of the Carolina Piedmont district in the last two decades, what do you predict as to the possibilities for the future leadership of this region in this industry?" The student should be encouraged to constantly exercise judgment, to draw inferences and to reach conclusions on the basis of the ideas which he gains from his reading. This drawing of inferences will become a dangerous practice, however, if he is not at the same time taught that he must habitually check his own deductions and verify statements that he reads in the light of findings in authoritative sources. Such a practice will tend to break down in the student's mind the current belief that because the "text says so" the items stated must be truth. It will likewise tend to develop an open-minded attitude toward all types of reading material which will invite thoughtful comparisons of materials read and the checking of doubtful statements thru comparisons with materials chosen from the recent contributions of two or more acknowledged authorities in the field.

5. Ability to concretely visualize features, conditions and complexes described in reading materials is vital to successful geographic thinking. An individual cannot fully comprehend the geographical personality of a region until he can, for a time, project himself in imagination into the region under consideration and really sense the geographical conditions therein. Well written *word pictures* are highly valuable contributions to the student's sense of reality and should form part of the basic material of each unit studied.

6. Ability to cross-section materials in terms of associating new understandings with previous experiences is an absolutely necessary step in the education of the individual whatever the level of his training. Until such integration of the old and new experiences has taken place the ideas remain isolated facts and, as such, fail to function as a part of the body of working understandings which is the goal of the student's training.

7. Ability to comprehend the author's method of presentation is a most valuable aid to the acquisition of new modes of thinking required by the individual in the solution of his own geographic problems. The acquisition of this ability makes reading a challenge to the student for he becomes alert not simply to find statistics, colorful facts about the region, answers to questions, and the like but he is also seeking suggestions as to ways in which he can improve his own thinking technique. This type of training may be best given in the supervised study period.

METHODS OF IMPROVING THE STUDENT'S SKILL IN THE USE OF READING AS GEOGRAPHIC TOOL

1. Check to see that all reading material assigned has a vocabulary and consists of concepts suited to the apperceptive mass (background of basic understandings) of the student. Suppose that you read a discussion of the Mesopotamian use of koofahs and keleks and that the author gave no hint as to what Koofahs and keleks are. If you are not already informed on the subject the article may contribute no more to your understanding of the subject than if it were written in a foreign language which you could not interpret. If, on the other hand, the author tells you that a koofah is a native boat—a round boat made of reeds from the river and caulked with asphalt from nearby asphalt springs, and that a kelek is a crude raft made of logs bound together with withes of hides or supple reeds and kept afloat by being buoyed up by inflated goat skins—then the material has enabled you to acquire not only the concept of a koofah and a kelek but also the concept of the relationship existing between the Mesopotamian use of these transporting agencies and the native resources of reeds, timber, asphalt and river. In the second instance the reading material functioned geographically because the requisite apperceptive mass was supplied.

2. Check to see that the student is constantly and consciously working to improve his vocabulary. Strive to help the student to appreciate the value of being able to express oneself accurately but concisely. Weak students sometimes try to cover a lack of specific knowledge with an avalanche of words. Another type of student seems to feel that the value of one's vocabulary is to be measured in terms of the *length* of the words used! Each group should be led to see that the individual is most expert who expresses himself simply, concisely and accurately. Early in his training the geography student should be made aware of the need of acquiring as speedily as possible the technical vocabulary of the field of geography in order that he may be able to accurately interpret and express geographic ideas.

3. Reading may be made to function as a much more effective aid to geographic study if at the very outset the teacher sets up in the mind of the student a *definite purpose* for each reading assignment. As an instructor be sure that this definite purpose is *worthwhile* in terms of the specific contributions which the materials assigned have to contribute to the goal of the unit upon which the student is working. When the reading is completed *check* to see

that the student has gained the understandings that he was sent to the material to find. Finally, *make immediate and continued use, wherever pertinent,* of the understandings gained.

4. Take care that every part of the assignment bears directly on the attainment of the elements of thought the acquisition of which will bring the student most quickly and most effectively to the mastery of the core of thought of the unit under consideration. This core of thought consists of the essentials of the geographic personality of the region. Such procedure means that the student must make no attempt to "embroider" the core of thought *until mastery is assured.* Wide reading, chosen at random, before mastery is achieved often brings hopeless confusion to the learner because of loss of focus on the core of thought—which is the basic goal. *After mastery* of the core of thought is achieved the student may read widely and deeply on the subject at will—and should be encouraged to do so—for he then has a standard by which to gauge his findings and can thereby check the relevancy or irrelevancy of materials presented. The student should be made to realize that much of the material he reads thus widely is not being read to be remembered as such but has served its purpose when it has sharpened his concepts, given illuminating detail and added color and thereby *reality* to the mental picture he already had of the region.

TYPES OF READING MATERIAL OF AID TO THE GEOGRAPHER

1. **Textual Material.** The single greatest need of students and teachers of geography at all levels has been geography texts written in accord with modern geographic and educational philosophy. This means texts which develop the major understandings of the geographic personality of regions under consideration thru the use of a vocabulary and of concepts suited to the learning level of the student; texts which give attention to the element of gradation in terms of (a) difficulty of acquisition of concepts presented and (b) the social value of the materials dealt with. This means, too, texts which are organized on the unit plan so that all the elements of thought presented are logically focused on a core problem the solution of which may serve as a functioning understanding in application to life situations. Grade school texts in geography are rapidly being modified in accord with the modern conception of a good text and high school and college texts are slowly but surely falling into alignment with modern philosophy in the fields of geography and education.

2. Reference Material. The child should be taught that the encyclopedia and reference books perform much the same function in the field of reading that the atlas does in its field, that is, they are finding gazetteers for a great mass of factual material but since their focus is not upon developing understandings of geographic relationships they cannot be classified as geographic textual material. The student should very clearly perceive this very important difference in the function of textual and encyclopedic materials. The same care should be exercised in the selection of reference materials that is graded to the apperceptive mass of the learner as is used in the choice of other types of reading material (as was discussed earlier).

3. Geographical Readers, Stories and Fiction. For the elementary school child this type of reading material includes many stories, readers, magazine articles and newspaper articles suited to his reading level. In the choice of such materials be sure that they give true pictures of conditions existing in the regions dealt with. Check to see that the material presents the conditions that are true today. Many school libraries are crowded with materials that have little utility because they are out of date. Newspapers and magazines are valuable daily aids to the geographers. A *current* article written as the result of personal observation of the author is a tremendous aid in giving the reader a sense of reality.

For the high school and college student we may add to the list named above a wealth of fiction which will function as perhaps no other type of reading material in helping the student to visualize the conditions in the region under discussion. Your local library possibly can furnish you with a pamphlet entitled "The Gold Star List of American Fiction" wherein you may find a classification of the fictional treatment of various regions of our own country![1] An excellent selection of books for boys and girls which deals with various parts of the world is listed in the bibliography "Realms of Gold in Children's Books" on pages 335-338 and pages 488-578.[2] An inexpensive series of pamphlets on books of fiction valuable to the geographer is Leaflet 335, "Around the World in Books," Helen Cowles Le Cron and Leaflet 334; "Our Pioneer Background," Selected.[3]

Geographical reading, wisely used, may be made to function

[1] You may obtain one for your own use from the Syracuse Library, Syracuse, New York.
[2] Published by Doubleday, Doran Co., Garden City, New York.
[3] Published by Better Homes and Gardens, Des Moines, Iowa.

effectively in contributing valuable understandings to the business man, the professional individual and the person of leisure. Reading can be made to vitalize the life of the "globe trotter" because it equips him with "eyes that see and ears that hear." Well directed leisure reading may be made to function in broadening one's outlook on life. Such reading may enable the individual to substitute tolerance for prejudice because the materials he has read have brought to him understanding. Such a state of mind should come as the result of the attainment of a world point of view. Now as never before the world demands of every thinking individual world-mindedness.

4. **Magazines.** Among the professional magazines some of those best suited to the student and teacher of geography are *Economic Geography, Geographical Review, Geographical Journal, Home Geographic Monthly, and Journal of Geography.* These magazines furnish much new material that is the result of the research of experts in the field of geography so that they constitute valuable reservoirs of accurate information. In the case of the first three magazines listed the articles are often of a technical nature and are therefore unsuited for the use of the untrained and immature student.

Among the magazines which are highly valuable and are at the same time somewhat popular in appeal are *Asia, National Geographic, Travel, Geographic News Bulletin,* and *Review of Reviews.*

LOCAL INVENTORY AND REGIONAL PLANNING IN THE SCHOOL CURRICULUM*

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Education, in general, and geography, in particular, have an unusual opportunity before them. The need in these days for a thoro inventory of our resources and of our economic and social conditions, followed by intelligent planning seems so obvious as to need no defense.

It is here suggested that work in Local Inventory and Regional Planning be added to the school curriculum. The idea is not entirely new. Local surveys have been made by classes in sociology, civics, geography and history. Unfortunately, such surveys have been independent and unrelated to one another. They have, for the most part, been carried at college level rather than by elementary or secondary school groups. An excellent beginning has been made in the composite survey, largely as the result of an invitation and suggestion made by the writer in a paper read before the geography section of the Michigan Schoolmaster's Club last year. Teachers and their classes in several communities of the state have undertaken the work.

In England, Germany, Russia and Japan, work in local and regional surveying has been an integral part of the education scheme for the past few years. The Land Economic Survey of the State of Michigan has done most excellent work and has developed a method and technique both in inventory and planning which will be of great assistance. Other states have similar organizations either in operation or formation. President Roosevelt did much to promote inventory and planning when he was governor of New York and has stated his attitude toward planning on a national scale.

We, however are not primarily interested in such work as to its national, material application or in it as an end to pure research, but, rather as a method in education. Is work in "Local Inventory and Regional Planning" a justifiable addition to the school curriculum? Let us begin with simple definitions.

A local inventory or survey may be defined as the organized study of a small area and of its life in every important regard, and

* After a paper read before the Michigan Schoolmaster's Club, March 29, 1933.

the correlation and integration of all of these conditions into a composite and complete picture of the area.

We are all local surveyors and explorers whether we are conscious of the fact or not. Our effectiveness in this, to a large measure determines our efficiency as individuals and our value as citizens. The degree to which the spirit of exploration and investigation is developed is the key to our mental alertness and the limitation of our mental development. Every organism, no matter how lowly, begins life by exploring and making adaptions of and to its local environment. To the small child it is first its crib and bedroom, then the house, the yard, the immediate neighborhood, and then its school locality. We find the adult still busily exploring—where to rent or build, where to establish a business or to extend its activity.

In the local survey here suggested, the student will see, for the first time, a composite picture of the community in which he lives. He will see it as an integrated, workable whole and not "a structure of separate blocks, which however cunningly mortared together, can never give us a likeness of the universal reality."* The student here will begin with reality and not with generalizations. He will approach his task analytically. In his detailed inventory of the locality he will see the form and structure of all the conditions which go to make up the community life. He will see his place in it. In it, he will see countless remains of the past and will recognize many trends toward future development. He will be able to interpret the present life and landscape of his locality in terms of its historical development and to some degree see into its future.

Here is a real life problem for the child and a centralizing interest in his social studies. His work will become purposeful to him and he will be stimulated toward independent and clear thinking. As a discipline, the student will learn not only to plan his work carefully, but also to seek out varied and original sources of material. He will have to evaluate his materials and to round out and complete a definite project. From this work should come a growth in ideals, attitudes and habits, a growing understanding and respect for the problems of other people, a growing sense of responsibility and an understanding of the individual's place in the community. Group problems, a recognition of the interdependence of

* H. J. Fleure, "Regional Survey Preparation to Town Planning," Papers, Town Planning Institute 1917-1918.

all things to one another, and an understanding of the need for law and a respect for it are likewise developments that can be expected.

Regional planning, in its narrowest sense, implies the formation of a scheme in which each locality and its parts are fitted into an efficiently working regional pattern. In the broader meaning is recognized the fact that the nation and the world are composed of a number of differentiated regions each interdependent with all others. The student will more clearly see this truth after he has an intimate knowledge of one of its parts, however small it may be.

There can be little doubt that there is a rapidly growing interest in both inventory and planning in the United States. According to Charles A. Beard in an article which appeared in the *Forum*, "Planning is already here; it is inherent in our technological civilization." Planning without proper inventory, is obviously futile. Too many so-called plans have already proved this to us. The United States has been slow to enter this field and reasonably so. Our resources have been abundant and our residue of past errors has not been too heavy. We, however, live in another day. Planning is inevitable now—regional planning, state planning, national planning. Education can do well by accepting this truth and proceeding in accord with it.

It has been stated previously that work in local inventory and planning was already a part of the educational system in certain other countries. In England, a central bureau has been established and there is in progress an inventory of the present land utilization of the entire country. School classes and teachers, assisted by clubs, retired individuals, local officials, and volunteer workers of all sorts are building this basic inventory for the nation. It is not expected that the maps made by at least the smaller children will be of practical value. That is not the primary aim. Rather it is a means of educating citizens. Interestingly, however, many of the maps have proved to be of excellent quality and some have been published by the government. The trend in British thought is well illustrated by C. C. Fagg, and G. E. Hutching, in their "Introduction to Regional Surveying," p. 2, published by the Cambridge University Press. Here it is proposed to integrate all of the sciences into the locality study.

In Germany, the "Heimatskunde" or home study school is heading in much the same direction. In Russia the educational plan

and the national economic and social plans are closely integrated. The child is taught that it is his duty to know his locality, to explore it and to report it. In Japan, where a strongly centralized government dictates educational policies, there is a nation-wide exploration into the locality—its resources, its settlement, its history, its folk-lore and legends and in fact into almost every conceivable condition. This is accomplished by the active governmental encouragement of travel for entire classes and schools to the seats of Japan's antiquities, industries, and political centers. The results may or may not be of any material value to the state, but the process is building intelligent and educated citizens. We would like to make the statement here that Japan's strength and efficiency, in spite of her limited area and resources, lies to a large extent in its people who, possibly more than any other, know their home land. Furthermore, this same understanding can be extended universally.

SOME NOTES ON APPLICATION

The logical and necessary beginning for local inventory and regional planning is the construction of an inventory map of the locale. For the field work map, sheets of convenient size on a scale of six inches to the mile should be used. For the composite class room maps, upon which will be built up the accumulated data secured in the field, a smaller scale may be used. The field sheets should have wide margins for the noting of special data. A notebook should be carried in the field by each worker. As complete notes as possible should be taken. Material not shown on the map can thus be recorded in the field. Questions to be solved later should be noted by number on the map and in the notebook. Instruction, given in the field, can be recorded. The notebook is also a practical tool in classroom work. Field maps should be supplied in abundance and should be secured as cheaply as possible. If the topographical sheets of the U. S. Geological Survey have been completed for the locality they can be reproduced cheaply in black and white. Land Economic Survey departments and similar organizations often have excellent maps of many districts. Many Highway Departments also issue maps which may be secured and reproduced. Investigation will doubtlessly bring to light local maps.

The following data and legend are suggested for the preliminary map.

Major Use	*Primary symbol (in color)*	*Secondary symbol (in pencil or ink)*
Commercial	Dark blue	wh—wholesale r—retail
Manufacturing	Purple	l—light h—heavy
Storage & Warehouse	Orange	g—grain elevator cl—coal yard etc.
Railroad property	Red	— — — —
Public	Dark Green	c—cemetery pk—park, etc.
Residence	Pink	1—superior 2—middle class 3—ordinary
Idle	Brown	w—waste
Forest & woodlot	Light Green	u h—upland hardwood, etc. 3—6—average diameters in inches — — — — — grades of stocking —
Crop Land	Yellow	c—corn ct—cotton w—wheat, etc.
Pasture	Light Blue	p—permanent t—temporary r—stump

As indicated in the above legend, the primary uses of the land are recorded in color. Each student must therefore be equipped with an assortment of crayons or colored pencils. The secondary symbols are superimposed in pencil. These may be inked later.

Once the problem is attacked, the workers will find themselves

carried from one project to another so rapidly and naturally that it will be necessary to insist upon a thoro understanding of each step before proceeding.

The need for other maps will quickly become apparent, in order to help explain the patterns of distribution shown on the preliminary inventory map and to help answer the many social, economic, historical and civic problems that will arise. The following list of possible maps, altho not exhaustive or necessary in every study, may be suggestive.

1. Distribution maps of specific forms or functions, *i.e.*, cattle, fire hydrants, delinquency cases, polls, etc.
2. Maps of forms and factors of the natural environment, *i.e.*, surface, soils, drainage, vegetation, animal life, etc.
3. Economic maps, *i.e.*, land values, intent in ownership, economic domains, transportation, etc.
4. Historical maps, *i.e.*, settlement, land use, transportation, etc. at different periods.
5. Maps showing sociological conditions, occupational distribution, etc.
6. Political maps, wards, voting, etc.

Many other map records, not mentioned above, may be added to the school collection. Many of these mentioned need never be made. The selection depends upon the locality. Many once made need not be re-made. They become part of the permanent equipment of the school and are referred to when needed.

The present library equipment of the school, will in most places be found to serve quite as well for this program as it does for the present work in social studies. In addition, every locality offers a vast store of varied and original source material. Furthermore the present teacher of social studies doubtlessly is as well equipped to direct the work in local inventory as she or he is to teach the present social studies. In countries, where this type of study has been attempted, it has aroused great community interest. In places, it has become a real community enterprise, with parents and volunteer workers participating in the general project.

The problem of home work is here combined with out-door and healthful but not violent exercise.

SUMMARY OF INVESTIGATIONS IN GEOGRAPHIC INSTRUCTION

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This survey was undertaken with a view of bringing up to date the work which Miss Norah Zink did for the Thirty-second Yearbook of the National Society for the Study of Education. The investigations which Miss Zink reviewed dated from 1903 until 1931. She was unable to secure all studies in 1930 and 1931. The following list includes studies of 1929, 1930 and 1931 not covered by the former survey. The writer planned to review studies made in 1932 but found it impossible to secure a complete report, and, therefore, decided to eliminate all studies made in 1932. This survey is not as detailed or as carefully made as Miss Zink's survey, but it does give an idea of the types of problems studied.

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18. Katherine Evangeline McCue, Analysis of questions and Study Problems found in Geography Textbooks for Grades 4-7. Master's thesis, Loyola University, Chicago, Ill., 1930.
19. Rev. Thomas J. Malone, Mission Magazines as Supplementary Reading for Geography. Master's thesis, Catholic University of America, Washington, D.C., 1929, 37 p. ms.
20. Louis Margon, Causes of Failure in Geography in Elementary Schools. Master's thesis, New York University, New York, N.Y., 1930.
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25. Myrtle Sexauer, Analysis of Geography Tests Available for Classroom Use to Determine Whether the Various Tests are so Constructed as to Measure the Child's Ability to Think Geographically and to Use Geographic Tools Intelligently. Master's thesis, University of Pittsburgh, 1931.
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NATURE OF THE PROBLEMS STUDIED AT VARIOUS LEVELS

Elementary Level. (Mainly grades four, five, and six.) As one would expect, the largest number of studies deals with methods and subject-matter in grades four, five, and six. Some of the studies also include materials and methods in the seventh and eighth grades.

This distribution is to be expected as geography is almost universally taught in grades four, five, and six. In all, eighteen of the thirty-two listed deal with these grades. They are by number, 3, 4, 6, 9, 11, 13, 14, 17, 18, 19, 20, 21, 23, 25, 26, 28, 29, 30, 31, 32. The eighteen researches deal with specific units of subject matter planned for specific grades, (30, 28, 13, 6, 21); with difficulties of teachers and pupils, (4, 11, 20); with supplementary reading, (19); with pupil activity, (29); with textbooks, (18, 23); with the collection of subject matter and derivation of principles, (9, 14), with courses of study, (26, 32); with tests, (25); and with preparation of teachers for grade school, (17).

Junior and Senior High School. Only four studies deal with the junior and senior high school field as such. They are numbers 2, 7, 12, and 24. There are probably two reasons for this dearth of studies. One is the fact that geography does not, as yet, occupy an important place in our high schools. While it is almost universally given in the first year of junior high, many schools do not offer it in the second year. Altho the number of senior high schools offering courses is increasing, they are as yet in the minority. The second reason is probably due to the fact that so frequently in high schools the geography courses are taught by teachers who are not prepared, consequently little interest is manifested by them either in improvement of the subject matter or the method of presentation. It is a case of "they know not that they know not."

Administration. Two studies (1, 22) deal with the supervisory aspects of geographic instruction.

College. Two studies (5, 8) investigate problems concerned with geographic instruction on the college level. Considering the widespread recognition of the subject on the college and university level, there should be more studies concerned with this phase.

TYPES OF PROBLEMS STUDIED

History, Status, and Trends. In the former report a large number of history, status, and trend type of studies were reviewed. Seven of the present list may be classified in this group.

Sherwood's study (26) endeavored to discover trends in geography and geography teaching. Watson (32) and Hohman (10) analyzed courses of studies and also endeavored to evaluate them by means of certain criteria set up by the author and validated by expert opinion.

Pridgen (23) investigated the evolution of geography textbooks

from 1784-1930, comparing them in respect to aims, objectives, content and methods. He also traced interrelations between certain educational movements and the changes in the geography textbooks.

McCue (18) analyzed the questions and study problems in certain textbooks.

Rankin (24) made a summary of the history of present trends of geography thru an analysis of professional books and magazine articles.

Kierman (12) investigated the status and possibilities of field work in high school geography in the New York area.

Determination of Content. Three studies deal with the determination of content. Coburn (2) attempted the construction of a junior high school course in occupational geography by analyzing and organizing materials from the United Census reports. Harner (9) made a geographical survey of Greeley, Colorado and vicinity, and assembled materials available for the schools of that locality. Little (14) endeavored to develop certain techniques to be used by the elementary teacher in deriving human geography principles. Source materials and stories from children's books with geographic content were analyzed. Included in the study is an annotated bibliography of the materials used.

Smith (27) endeavored to measure the relative value of geographic terms. Wallace (3) analyzed the writings of "frontier thinkers" in an attempt to determine important problems and generalizations which should be included in a geography curriculum.

History and Trends of Method. No study was found which dealt specifically with the History and Trends of Method. Tien-Kuei Li (15) made a survey of the best practices according to his criteria in the teaching of geography and endeavored to interpret the practices found. Pridgen's (23) study of the evolution of geography textbooks, included an analysis and comparison of methods as illustrated in texts published from 1784-1930.

Study Methods. Few studies were found dealing with methods of teaching from the scientific viewpoint. French (7) studied the effects of specific training in vocabulary, reading of maps, grafs and tables, and organization on pupil achievement by means of paired groups. Louper (16) investigated the effects of the use of equipment in geographic instruction. Trapp (29) tested a plan of pupil activity in fifth grade geography.

Kiernan (12) study included suggestions for the use of the field work in high school geography, but was not a scientific study of its value as measured by definite results.

Analysis of Difficulties. Not as much is being done on the analysis of difficulties as should be.

Cox (14) investigated difficulties in teaching elementary geography by questioning a large number of teachers. While certain difficulties were discovered, the investigation revealed the inability of teachers to state their difficulties. Keefer's study (11) is not strictly speaking a geographic study. It is really a study of maladjustment, and the geography group happened to be the one studied. However it does reveal how such factors as over-age and low reading ability affect achievement in geography. Margon (20) made an investigation of the causes of failure in geography in the elementary school.

Tests and Testing. Tests and testing were studied by two. Flaacke (5) constructed an objective test in geography for normal school students. Sexauer (25) analyzed all geography tests available in 1930 to determine whether they were so constructed as to measure the child's ability to think geographically and to use geographic tools.

Supervision. Two studies in supervision were reported, Cadwell (1) on the supervisory needs of teachers of geography, and Price (22) on measuring the growth of teachers in teaching geography. These are the first studies made on the supervisory phase of geographic instruction. Cadwell's study resulted in a check list which should be of value to both supervisors and teachers.

Training of Teachers. Grenels (8) also investigated a new field. She made a study of the activities selected for professionalizing geography content for use in the training of teachers.

McCain (17) made a study of what the elementary teacher of geography needed to meet the requirements of her job and then attempted to discover if teachers' colleges and normal schools were giving the proper preparation to the student teacher. Flaacke's study should be classified here as well as in Tests, as the object was to use the test for diagnostic work with students in teachers' colleges and normal schools.

Construction and Selection of Teaching Materials. Eight studies dealt with the organization and teaching of specific units of subject matter. These are difficult to classify as matched groups were not used and no objective data was used in the selection of materials. The

studies are purely subjective. These are Colman (3), Frantz (6), Lay (13), Nichols (21), Thompson (28), and Tuttle (30).

One study, Malone (19) deals with the selection of supplementary material. Twenty-one mission magazines were measured as to their geographic content.

SUMMARY

The thirty-two studies thus briefly reviewed show a wide scope of research. Their value varies widely and the present reviewer does not feel called upon to pass upon the conclusions reached. However one point stands out clearly and that is the great need for more scientific studies. As stated in the Thirty-second Yearbook of the National Society for the Study of Education, some much needed investigations are:

1. The determination of minimal essentials in terms of geographic understandings.
2. The grade placement of subject matter as conditioned by the difficulty of the geographic understanding presented.
3. Analysis of difficulties.
4. Analysis of children's errors.
5. Analysis of children's interests.
6. Tests on the reading of grafs and statistics.
7. Tests on map-reading and picture reading abilities.
8. Investigations in the fields of method, supervision, and the training of geography teachers.
9. The development of materials making definite contributions to geographic understanding.

Another point that should be emphasized is the need of greater publicity. Some of these researches contain materials and suggestions that are valuable to teachers, supervisors, administrators, but they are not in a form available for use. An illustration of this is Cadwell's study. The check list in that study was the result of a careful analysis of recent literature on geographic instruction and is valuable to a teacher for self-checking and to a supervisor in analyzing a teacher's work. Coburn's study using the census reports to construct a course in occupational geography is another, and there are others. More encouragement should be given to the publishing of the methods used and the results of studies. There would be less repeating of the same or very similar studies and new studies could build on the old. More rapid progress could thus be made.

COCONUTS FROM CEYLON*

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The coconut palm grows in lands that are warm and where there is rain more or less all the year round. It loves sea breezes and sandy shores where it sends its roots right out under the salt water; it will, however, flourish some distance from the ocean.

Ceylon, which is one of the chief countries producing coconuts for commercial purposes, has almost an equatorial climate. It has no cold season and snow and ice are quite unknown. The main rain bringer, in the low lands of the south-west where the coconuts are principally grown, is the heavy convectional rain shower that comes in the afternoon between about 4:00 P.M. and 8:00 P.M. When it falls it is as tho all the taps had been turned on. Here the coconut palm is one of the commonest trees, and all along the coast it may be seen bending over towards the sea as if it were listening to the waves that break at its feet.

The palm grows to a height of from 50 to 100 feet, but does not often attain a diameter greater than about 18 inches. It frequently rises from the ground at an awkward angle of 45 degrees.

At the top is a crown of long, graceful, feathery leaves the mid-rib of which is very thick and strong. Among the leaves hang the nuts.

The young coconut is a very different thing from what we recognise as a coconut in a grocer's shop. It is about as big as a small football and can be compared with a huge, unripe green plum. On the outside is a shiny green skin that corresponds to the skin of the plum; under this is a mass of soft, white, woody fibre that corresponds to the unripe part of the plum; inside this is the kernel or nut corresponding to the kernel of the plum. At this stage the nut contains a great deal of milk and not much flesh.

* The author wishes to acknowledge much help in the preparation of this article from Miss E. K. Cook, Isleworth, England.

Note to teacher: Tho Ceylon receives rain from both the north-east and south-west monsoons on the hill flanks it also experiences the daily convectional rain characteristic of equatorial lands and so offers a kind of transition from the truly equatorial regions to the monsoon lands with which we shall deal next.

In 1925 the world's exports of copra were 904,000 tons, of which the British Empire supplied 402,000 tons. Of this total British Malaya and Ceylon between them supplied 238,000 tons.

Later on, when the nut is ripe, the thin outer skin turns a pale brown, the soft white woody part becomes a mass of stiff, deep brown fibres, the kernel hardens, the milk decreases in quantity and the flesh thickens and becomes more solid. It is only the kernel that we buy as a coconut.

The Singhalese say that wherever you see the coconut palms

FIG. 1. A coconut garden in southeastern Ceylon. Note the boy with sarong and girl with saree. Photo by E. K. Cook.

there are houses not far away, and, as a matter of fact, the plantations usually correspond to our gardens, tho there are a few larger plantations belonging to English or Singhalese proprietors.

The trees are grown from nuts, bear fruit when they are six or seven years old, and die when they are from eighty to one hundred years old. In the early stages they need a great deal of care, but when they are once well established they can be left almost alone. Nothing grows under them and there is, therefore, plenty of room in the plantations in which children can play.

The chief work on the plantations is the cutting down of the nuts. This must be done before they are ripe, for if they fall they are likely to kill any one passing underneath. The cutters, who climb

the trees usually work for a number of people, and go round from time to time to see where their services are needed. On the larger plantations there may be a daily collection, by means of a cart, of the nuts placed on the ground, near the tree, by the cutter.

The four chief products of commercial importance are copra, oil, coir, and desiccated coconut. After the coconuts are gathered

FIG. 2. A village street showing the surface drains with little stone bridges leading into the shops. Underground drains are not practical because of the enormous amount of rain that falls in a single shower. The people with turbans are Tamils. Singhalese wear no headdress. Photo by E. K. Cook.

they are husked by striking them sharply on an iron-pointed stake fixed upright in the ground, after which the fibre is torn off by hand.

Copra is obtained by splitting the nut in two with a hatchet, taking out the flesh and drying it in the sun or by artificial heat in a drying shed.

The oil is obtained from the copra by pressure which is applied by machinery in large factories. The refuse (poonac) left after extraction of the oil is used as food for cattle and poultry and as manure for the soil, and is exported as cattle cake.

To obtain coir, the husk of the nut is cut in pieces and soaked in a special enclosure at the edge of a river for a few months. Here it rots, the process being accompanied by a most unpleasant odor. In due time some member of the owner's family will be seen squatting

on the ground under the trees beating the rotting husk with a stick to separate the fibres from one another.

The coconut palm has many uses. The stem may be used in the construction of the water gutter under the eaves, small huts, and fences. The dry leaves are plaited to form, for the house or barn, a thatch that will keep water-tight a whole year, even in the tropical rains.

From the fibres, ropes and mats and nets are made. When the fisherman goes a-fishing by torch light his net may be of coconut fibre, his torch a leaf-stem specially prepared. He carries home his net and string of fish on a yoke formed of a coconut stalk.

From the shell are fashioned spoons, forks, basins, mugs, salt-cellars and jars. Tho ordinary oil lamps are now common enough, there are still in daily use many lamps made of coconut shells fed by coconut oil. They are mainly employed when the light has to be carried about, e.g., down the garden at night, much as we might use a candle or an electric torch.

The "water" as the Singhalese call the fluid part of the nut, is a drink, the flesh a food and a source of oil. As a food it is seldom eaten in lumps, but is grated and often used to soften down, for the children, the hot curries that their parents love. It is also soaked and squeezed in water to produce what the Singhalese calls coconut "milk." This is much more important in cookery than the nut itself.

The juice that can be obtained from the flowers gives: (1) toddy, a fermented drink, (2) vinegar, and (3) jaggery (pronounce *a* as *u*), a brown, candy-like sugar of which the children are very fond.

Coconut oil is used in cooking and as a hair oil keeps the hair in splendid condition. Coconut blossoms and the young leaves, while still yellow, are used for decorations. If and when a body is cremated the funeral pyre is usually made of coconut wood and decorated, like the hearse, with coconut leaves, etc.

The Singhalese who own and cultivate most of the plantations are a small people, with dreamy dark eyes; their skin varies in color from a very light brown to a very dark chocolate brown, and the babies look like real live chocolate kiddies. The hair, which is long and black is bound into a "bun" at the back of the head. Formerly both men and women did their hair in the same way, but the "bun" is rapidly going out of fashion among the younger men. In it the woman sticks a gold or imitation gold pin and both women and children use it as a cushion for pins and needles.

Men and women generally dress almost alike. Dress is simple and needs little sewing. The wee children have a good time for from about the age of eight months to seven or eight years they wear nothing except perhaps a bangle on the arm and a chain round the waist. Later on they are clothed in a little white cotton slip and they add still more when they go to school.

The boys, for instance, wear a *sarong,* a piece of white or colored cotton, joined to form a kind of skirt that is held up by a leather

FIG. 3. Rear view of a house in a coconut garden. The walls are of laterite blocks and the roof is thatched with coconut palm leaves. A high class Singhalese girl in saree is shown in the center foreground. Photo by E. K. Cook.

belt, a thin cotton vest with sleeves and a cotton scarf. Girls don a kind of English summer frock till they are about thirteen years of age after which their clothing consists of a piece of cloth wound round the body.

The proper dress for women when they go out into the streets is the *saree,* about eight yards of material worn round the body. Older men and servants often have a white, grey or khaki coat like an Englishman. All, men, women and children, wear jewelry and a man may often be seen working in a field adorned with ornaments of gold that are studded with diamonds and rubies.

Overcoats are never needed because it is never cold but mackintoshes are necessary as a protection against rain. The poor have no mackintoshes but they carry umbrellas that also serve for sunshades when the sun comes out: hats are not in use.

As the plantations are mostly small the owner must have some other way of adding to his income. He may be a fisherman, a rice grower, a clerk, a domestic servant, a policeman, a worker on the railway, or a member of the now large professional class, especially a solicitor.

Moreover, in addition to the plantation, he sometimes possesses a garden, tho its produce is limited in variety by the sandy nature of the soil. This soil suits the coconut, but not a great many other things. Chillies, largely used in curries, find a place, but the chief objects in the garden are bananas. Of these some are large and rather tasteless and are eaten as a vegetable, while others are smaller and more tasty and eaten as a fruit. The leaves of the banana are also of use for many household purposes.

On the plantations, usually near the road, stands the house. The commonest type is a one-story bungalow whitewashed outside and thatched with coconut leaves, tho the owner prefers tiles if he can afford them.

The veranda of the bungalow is the chief sitting room, the place where meals are eaten and visitors received. It serves as a bedroom for servants and, among the poor, as a bedroom for the boys of the family.

The house always contains at least two rooms, one for a kitchen and storeroom, and one for a bedroom. There is usually another small room for cooking by means of an open wood fire on the floor: some of the smoke escapes by a hole in the ceiling and some remains on the walls as soot. The cooking vessels are round earthenware pots and are supported on bricks.

There is very little furniture, as most kinds of wood are eaten by some variety or other of insect. In the bedroom is a bed for mother and the baby, or for anyone who is ill, but other folks sleep on a palm-leaf mat on the floor. This kind of bed can be conveniently rolled up with the pillow and put out of the way during the day time. There are no blankets. People sleep in the clothes they have worn during the day, but they change these each day when they bathe. They stand in the bathroom, soap themselves all over and then pour water over themselves with a bucket or a tin dipper. Some bathe at a common well or in the river, and it is no uncommon sight to see men walking home from their bath drying their long hair in the streets.

Chairs are not needed as it is the custom to sit cross-legged on the floor on palm-leaf or coconut mats. At meal time, however, both

tables and chairs are used, tho the children may often take their meals on the floor and use banana leaves for plates.

At seven in the morning they drink tea with much sugar but probably without milk, and eat different kinds of cake. A favorite cake is the "hopper" made of rice flour and coconut milk. It looks like a crumpet or Scotch pancake. It is freshly cooked each day and eaten warm with grated coconut, pounded chillies, and some chopped-up strong-tasting thing like onions, green tomatoes, or dried fish. Breakfast is taken at noon. Water is the chief drink and

FIG. 4. Coconut husks soaking in water at the edge of a river and coconut garden in the background. Photo by E. K. Cook.

rice the staple food. The rice is boiled down dry in a round pot. With it is eaten curry made of anything obtainable—meat, fish, fruit or vegetables. These are simmered in coconut milk and flavored with pounded chillies.

The curry is mixed with rice by the fingers, rolled into a little ball, and picked up with the fingers of the right hand. It is considered clumsy to dirty the palm of the hand. It is, of course, necessary to wash the hands both before and after a meal.

The last meal, dinner, is taken as late as possible, except in the case of young children, who eat at about five or six before going to bed. The food is much the same as that taken at midday.

The poorer folk have only two meals a day, early in the morning and late in the evening, and they seldom taste meat. In between

meals people drink tea, coffee, orange or lime juice, toddy, coconut water, mineral waters, and ginger beer is a great favorite.

The coconut plantations are in a densely-peopled region, and there are quite a number of little centers usually of the "street-town" type. In the main street are the shops, open to the air and the public, with the goods spread out on low stands. When a woman goes out she must, unless she is a servant, always have her husband, brother or son with her, so she is unable to go shopping alone, and among the upper-middle classes nearly all the shopping is done by the men.

At the shops there are no fixed prices. The buyer and the seller argue till they can agree. Many of the people are rich, but the average person is a farmer who grows much of his own food and may have very little actual money. What little money he may have has to go a long way, so shopping takes a long time. In a hot land, however, slowness is a virtue.

EDITORIAL NOTES AND NEWS

ALBERT G. ELDRIDGE, formerly in the geography department of the North Adams, Massachusetts, State Teachers College, was recently installed as President of that institution.

DR. DAVID J. SWARTZ is chairman of the geography section of the New York Society for the Experimental Study of Education. The section is sponsoring a series of three meetings with a program purposing to improve the teaching of geography in elementary and secondary schools.

Recent releases from the U. S. Department of Agriculture reveal some interesting results in experimentation with breeding disease-resistant plants and animals in new environments. One of these experiments has been conducted during the past five years in adapting buffalo to the climate of the interior of Alaska. The herd was transferred from Montana and in spite of a few fatalities has succeeded in doubling its numbers.

Another experiment centers in disease-resistant sugar beet seed production. Due to severe winter conditions in the sugar beet producing regions, the beets reserved for seed production must be dug in the fall and protected from freezing and then replanted in the spring when the roots will send up a flower stalk on which the seeds are produced. The cost of the hand labor involved in this production gave Europe an advantage over the United States, resulting in our importation of most of our beet seed from Europe. Unfortunately, beets grown from this seed are not resistant to curly top disease because this disease does not occur in Europe. Hence, the Department of Agriculture has had to breed beets for western United States that are resistant to curly top, and, furthermore, find a region to grow the seeds as cheaply as they can be produced in Europe. Southern New Mexico may prove to be a solution to the problem, as the mild winters there permit the leaving of the beets in the field over winter. By using machinery to plant, cultivate and harvest the seed, the cost of seed production should then be low enough to meet the European competition of cheap labor, and at the same time the plants grown from this seed should be disease resistant since curly top is severe in New Mexico and the less resistant plants should survive to reproduce the seed.

Still another experiment centers in hop production. Ordinarily it takes five years to grow hops from seed to fruiting maturity. By changing their natural conditions of growth, state and federal plant breeders at Corvallis, Oregon, have succeeded in shortening this period by two years. Since hop seed does not naturally germinate until spring following a winter freeze, they subjected the seeds on maturity to a month or more of freezing temperatures. This resulted in their germinating in the fall. Then in order to combat the short period of light in the winter greenhouses they used artificial light to give the equivalent of spring and summer lighting. By allowing the seedlings short dormant periods and inoculating them against the downy insect disease they succeeded in producing disease resistant plants maturing within three years.

Water from a hot spring heats a school in the Imperial Valley of California.

A new bus designed to make the desert trip from Damascus to Bagdad in 24 hours has recently been on exhibition in Cleveland. The compartment accommodating 38 passengers is dustproof and equipped with a water-cooling plant. It is mounted on 18 wheels and drawn by a cab with a 385 horse power Diesel motor.

GEOGRAPHICAL PUBLICATIONS

Ellsworth Huntington, Frank E. Williams, and Samuel van Valkenburg. **Economic and Social Geography.** 630 pp. Maps, charts and grafs. John Wiley & Sons, Inc., N.Y. 1933. $3.75.

This new college textbook provides abundant material on both social and economic geography. Such a dual arrangement is excellent if the introductory human and economic phases of the subject are to be combined into one continuous course. However, if these two aspects of the subjects are taught separately it might seem desirable to use some other text for one of the two courses. In that case the student using this new book for one course only would be forced to purchase a text which covered both. The book might find a wider sale if the social and economic materials were divided and issued in separate volumes.

As a whole the book takes high rank among modern texts in the field of human geography. The discussion is fresh, interesting and generally based upon statistics presented in graphical form. Many of the conclusions are based upon original research by the senior author. Abundant maps are provided but the absence of pictures will be a handicap to those teachers who emphasize the forms produced by man's use of the earth's surface.

Part I of the book presents the relation of economic activities to climate, relief, soil, and human factors. The treatment of climate occupies half of this section and is noteworthy for its originality and completeness. In comparison the discussion of soils appears to be abbreviated and lacking in vitality.

Part II is a discussion of human life in fourteen types of natural regions. These regions are based chiefly upon climate and range from the "Equatorial Rainforest Regions" to "Tundra and High Mountain Regions."

The economic geography of major industries begins with Part III, "The World's Great Products." Most of the agricultural and extractive industries are discussed here. Almost an encyclopedic treatment is given to crops. This is valuable for reference purposes altho many of the shorter discussions are too brief to be of much use except as guides to further study. No formal discussion of agriculture as an industry is attempted; the presentation is made entirely on the basis of the products of agriculture. A similar plan is followed in the treatment of the extractive industries. As a whole, however, this Part is an accurate, well rounded, and interesting treatment of the primary industries.

Part IV, "Industry and Commerce," contains what is probably the most complete discussion of the geography of manufacturing now available in any textbook in the English language. The general distribution of manufacturing is presented in one chapter which is followed by four chapters that contain a detailed discussion of the geography of important individual industries. In contrast to this the discussion of commerce is brief. It barely mentions or entirely omits such important products of man's commercial activities as trade routes and trade centers. A note on the changing nature of economic geography is placed at the end of the book.

JOHN Q. ADAMS

University of Missouri

Leonard O. Packard, Charles P. Sinnott and Bruce Overton. **The Nations at Work.** 696 pages, illustrated, 8 colored maps, appendix of 51 statistical tables. The Macmillan Company, New York, 1933. $1.72.

This book is an industrial and commercial geography for use in high schools.

There is no preface, but in its place a few paragraphs "to the teacher." Herein the authors state they have attempted to produce a book on the high school level by "simple diction," by "relating new knowledge to old by means of ample explanations and cross references," by "amplifying the text by frequent use of photographs and grafs" and by "providing an adequate equipment of questions, problems and exercises of both the review and thought-provoking type, without the introduction of ponderous,

irrelevant and difficult researches with which few schools and fewer students are qualified to cope." This last statement shows very clearly that one or more of the authors has had the real experience of teaching high school students. These days most high school students carry five subjects, and the student is above average who spends thirty minutes each day on the outside preparation of each subject. Laboratory work and textbook assignments keep the student busy without burdensome and often boresome reference reading. Certainly the authors of "The Nations at Work" must have had some of these thoughts in mind, judging by the completeness of the book produced. It is also interesting and rather satisfying to note that the authors do not insist that a tremendous amount of emphasis must be given to "man's response to environment." Some geographical writers have gone to seed on this idea.

This textbook follows the customary procedure of most books on commercial geography, treating first of the resources, industries and commerce especially of the United States, followed by a similar but briefer treatment of the more important countries of the world. The book is divided into units, with an occasional forecast of the contents of a group of closely related units. The last paragraph of the forecast of the units dealing with Europe states that "dissatisfaction growing out of the peace treaties following the World War, establishment of new boundaries, development of a spirit of nationalism in many countries, vast governmental debts, and a world-wide depression have kept Europe in a continuous state of unrest. National armaments are greater than they were in 1914. The peace of the world is at stake. Hope lies only in reduction of armaments and in cooperation between nations."

"The Nations at Work" is larger in size and contains more pages than most of the other high school books on commercial and industrial geography. For this reason it is suitable for a full-year course, providing sufficient laboratory and map work is done. The numerous illustrations are of excellent quality. From the teacher's standpoint the book might be improved by the addition of many more questions and problems and suggestions of maps and grafs to be made by the student. However, this is the function of a laboratory manual or workbook.

Westport High School M. H. SHEARER
Kansas City, Missouri

R. Lee Humbert, et al. **Virginia: Economic and Civic.** 427 pages, 6 maps, 1 graf, and 57 tables. Whittet & Shepperson, Richmond, 1933. $4.00.

This volume, prepared in Virginia Polytechnic Institute under the direction of the committee on industrial development of the Virginia Chamber of Commerce, presents in coherent organization a wealth of information relevant to a modern understanding of the "Old Dominion." Tho it constitutes the published results of an economic and social survey students of geography find it a valuable reference work on Virginia.

Part One treats industrial development, a brief chapter on manufacturing genesis and growth being followed by a longer one on recent accomplishments in various fields. Part Two includes chapters on the natural environment, mineral exploitation, forests, fish, agriculture, water resources, power, labor, transport facilities, and trade territories. Part Three, of least potential direct usefulness to geographers, contains materials descriptive of details of government, wealth and taxes, financial institutions, and educational agencies.

Nearly forty per cent of the people of Virginia live on farms yet but slightly more than five per cent of the book deals directly with their problems. Forests and fish together receive considerably more, and minerals between two and three times as much space as that devoted to farms. Possibly the small proportion of taxes paid by farmers (Table LX) partially explains the relative brevity of the chapter on agriculture.

Bibliographies, with number of titles ranging from eight to more than forty each for "Recent Industrial Progress and Expansion" and "Minerals and Their Exploitation," accompany all chapters. Most sources listed bear a Virginia address being for

the most part publications of the state. More than one-fourth of the sets of data displayed in tables came from various departments of the state government, but nearly one-fourth originated with the United States Bureau of the Census and a considerable number with other departments of the federal government.

Tho most of the contributors to the volume as well as those checking its accuracy serve Virginia in some public capacity the book carries the outer form and numerous inner evidences of scholarly research. It demonstrates that state advertising may reach a high plane. Materials revealing handicaps, disadvantages, or deficiencies of Virginia occupy but little space. Perchance the collaborators subscribe too heartily to the notion of Captain John Smith, quoted by the present governor in the foreword, that "heaven and earth never agreed better to frame a place for man's habitation."

The limited edition of this state handbook soon should be in use, a considerable portion of the seven hundred copies serving the needs of teachers and students of geography.

GEO. H. PRIMMER

State Teachers College
Duluth, Minnesota

Erich W. Zimmerman, **World Resources and Industries.** XIX and 842 pages, maps, charts, diagrams, Harper and Bros., New York, 1933. Price $4.00.

World Resources and Industries is an unusually timely and stimulating book. In it the author attempts a "functional appraisal" of resources with the stage reached in man's evolution, determining the values. The background needed for such an appraisal is stupendous and the results obtained are quite extraordinary. Tho written by an economist the point of view is essentially geographic and the book will have a firm place in every good geographic library. Many geographers will want it also as a regular desk companion. The text will serve well as a foundation for an advanced course in economic geography and no course in conservation should be considered complete without stressing some of its fundamental concepts. The book is also for the general reader and if digested by governmental authorities will clarify much of the present loose thinking.

The book is well thought out and the subject matter well organized into unit wholes. There are four parts. Part One—Background and Perspectives—divided into ten chapters, lays the foundation upon which the whole rests. Much of this is new and is especially helpful to the student who wishes to get a sound economic viewpoint. Part Two—The Resources of Agriculture and their Utilization—with twelve chapters, and Part Three—The Resources of Industry and Their Utilization—sixteen chapters, make up the main body of the book. In these two parts resources are not treated in a statistical or static way but in a dynamic way as functional elements fluctuating from time to time and place to place. It is essentially an evolutionary treatment with ever changing evaluations of material resources. Individual chapters are generally written around one or two major ideas. Thus the wheat and rice chapters stress the competition characteristic of agricultural products due to world wide diffusion of productive agencies, while the chapter on animal and vegetable oils and fats stresses the competition which comes from interchangeability within the group. The chapter on sugar stresses the political, that on tree crops, the time element. Part Four—headed Foreground and Prospectives—is divided into, Economy and Conservation of Natural Resources, and Nationalism, World Interdependence and Resource Hierarchy. This part is modest and conservative and in general forms a fairly good conclusion, tho by far the least constructive section.

This is not a book to be selected for an evening's easy reading. Its closely reasoned pages are so replete with ideas and so rich in suggestiveness that there is a constant desire to lay the book aside in order to follow up the stimulation received. On the other hand the style is simple and natural and thus the tendency also is to read the book from cover to cover at one sitting. The book is highly recommended.

W. H. HAAS

Northwestern University

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Dr. Carlson is Professor of Geography, Ohio State University, and co-author of Environmental Basis of Social Geography, and the Geographic Basis of Society.

Field Trip Experiences in the Intermediate Grades. By Elizabeth D. Zachari 49

Miss Zachari is a member of the Department of Geography, Louisville Normal School, Louisville, Kentucky. Among her many contributions to geographic education may be mentioned Italy: A Sixth Grade Project, and Spain and Portugal: A Sixth Grade Project, appearing in the JOURNAL, March, 1924, and October, 1925, respectively; The Correlation of Subject Matter and Method in Normal School Geography, *School Science and Mathematics,* March, 1924; The Water Supply of Louisville, in the Nineteenth Yearbook of the National Society for the Study of Education.

Teaching Values in the Study of Place Names. By Lewis H. Chrisman 61

Dr. Chrisman is Professor of English Literature in West Virginia Wesleyan College, and author of four books and numerous magazine articles. An article entitled "In Defense of Knowledge" appeared in *The Journal of Education,* October 22, 1933, and another on "A Vicious Circle in Higher Education" is published in a recent issue of *Education.* He has been interested in the study of place names for many years, and has done considerable writing on the subject, an article under the caption of "What's in a Name" appearing in *The Journal of the National Education Association* for October, 1932.

The Sago Growers. By Ernest Young 67

Mr. Young was one of the pioneers in the teaching of human geography in England and is well known in America as joint author of the Fairgrieve and Young "Human Geography by Grades." He has also served as visiting professor at the University of Chicago and the University of California at Los Angeles. He is a Fellow of the Royal Geographical Society, Honorary Organizing Secretary for Branches of the Geographical Association, and formerly Assistant Secretary for Higher Education in the County of Middlesex. This is the fifth article in our UNIT STUDIES series.

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